

## Remarks

In the present response, two claims (1 and 4) are amended. Claims 1-16 are presented for examination.

### **I. Claim Rejections: 35 USC § 102(e)**

Claims 1 and 5 are rejected under 35 USC § 102(e) as being anticipated by USPN 2003/0193776 (Bicknel). Applicants respectfully traverse this rejection.

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. See MPEP § 2131, also, *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Since Bicknel neither teaches nor suggests each element in the claims, these claims are allowable over Bicknel.

Independent claim 1 recites numerous recitations that are not taught or suggested in Bicknel. By way of example, claim 1 recites a signal routing board with one or more voltage regulators. The Office Action argues that the intermediate electronic component 110 (see FIG. 7 in Bicknel) represents Applicant's claimed signal routing board. Bicknel never discloses or suggests that the intermediate electronic component 110 has voltage regulators.

For at least these reasons, independent claim 1 and dependent claim 5 are allowable over Bicknel.

As another example, claim 1 recites "the signal routing board removably connects to both the I/O controller circuit boards and the storage array circuit board while the storage array circuit board remains connected to a housing of the apparatus." Nowhere does Bicknel teach or suggest these recitations.

For at least these reasons, independent claim 1 and dependent claim 5 are allowable over Bicknel.

### **II. Claim Rejections: 35 USC § 103(a)**

Claims 3, 4, 6-9, and 13-16 are rejected under 35 USC § 103(a) as being unpatentable over Bicknel in view of USPN 2003/0193776 (Felton). This rejection is traversed.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. *See* M.P.E.P. § 2143. For at least the following reasons, Applicants assert that the rejection does not satisfy these criteria.

The independent claims recite numerous recitations that are not taught or suggested in Bickel in view of Felton. By way of example, claim 7 recites “a signal routing board having electronics common to circuit boards connected thereto.” The Office Action admits that Bicknel does not disclose this recitation (see OA at p. 4). The Office Action attempts to cure this deficiency with FIGS. 7 and 8 in Felton. Applicants respectfully disagree.

FIG. 7 in Felton shows a midplane 208 that has a plurality of connectors, not electronics. For instance, FIG. 7 shows a pair of power supply connectors 516, 516' and other connectors (emphasis added: see [0094]). Felton expressly states:

Consequently, electrical signals that are exchanged between each LCC (or BCC) 108, 108' and a respective disk drive module 204 pass directly through the midplane 208; that is, communications between the LCCs (or BCCs) and the adapter board 216 are not routed or distributed over electrical traces on the midplane 208, but pass directly through the midplane 208. (See [0096]).

For at least these reasons, independent claim 7 and its dependent claims are allowable over Bicknel in view of Felton.

As another example, independent claim 7 recites “wherein the electronics are removable from the housing without removal of the storage array circuit board.” The Office Action admits that Bicknel does not disclose this recitation (see OA at p. 4). The Office Action attempts to cure this deficiency with FIGS. 7 and 8 in Felton. Applicants respectfully disagree.

The Office Action argues that the midplane 208 in Felton represents the claimed “signal routing board.” FIG. 7 in Felton shows a midplane 208 that has a plurality of connectors, not electronics. Even assuming *arguendo* that midplane 208 has electronics, Felton never states or even suggests that such electronics are removable from the housing without removal of the midplane. Again, claim 7 recites that “the electronics are removable from the housing without removal of the storage array circuit board.”

For at least these reasons, independent claim 7 and its dependent claims are allowable over Bicknel in view of Felton.

As yet another example, claim 7 recites at least three different circuit boards: a storage array circuit board, at least one I/O controller circuit board, and a signal routing circuit board. These boards are arranged in a particular configuration as recited in the claim. Felton, however, does not show this configuration. In other words, the midplane board 208 is not connected to a storage array circuit board and at least one I/O controller circuit board as recited in claim 7. Instead, the Examiner is performing an improper piecemeal construction that uses hindsight to arrive at the claim elements. In other words, the Examiner is picking and choosing unrelated embodiments or teachings from Felton and forcing them into the embodiment of Bicknel. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

For at least these reasons, independent claim 7 and its dependent claims are allowable over Bicknel in view of Felton.

### **III. Claim Rejections: 35 USC § 103**

Claims 2, 7-9, 11, and 12 are rejected under 35 USC § 103(a) as being unpatentable over Bicknel in view of USPN 6,208,522 (Manweiler). This rejection is traversed.

The independent claims recite numerous recitations that are not taught or suggested in Bickel in view of Manweiler. By way of example, claim 7 recites “a signal routing board having electronics common to circuit boards connected thereto.” The Office Action admits that Bicknel does not disclose this recitation (see OA at p. 7). The

Office Action attempts to cure this deficiency with FIGS. 9-12 in Manweiler. Applicants respectfully disagree.

FIGS. 9-12 in Manweiler show a midplane 76 that has a plurality of connectors 78, 80 and mounting screws 82, not electronics:

Midplane board 76 provides the interface between all of the modules and power supplies within chassis 10 .... As depicted midplane board 76 includes connectors 78 and 80, and mounting screws 82 and 84. (See 4: 53-60).

For at least these reasons, independent claim 7 and its dependent claims are allowable over Bicknel in view of Manweiler.

As another example, independent claim 7 recites “wherein the electronics are removable from the housing without removal of the storage array circuit board.” The Office Action admits that Bicknel does not disclose this recitation (see OA at p. 7). The Office Action attempts to cure this deficiency with FIGS. 9-12 in Manweiler. Applicants respectfully disagree.

The Office Action argues that the media drive module 18 in FIGS. 2 and 8 of Manweiler is equivalent to the claimed “storage array circuit board” and that the I/O module 36 in FIGS. 2 and 8 of Manweiler is equivalent to the claimed “I/O controller circuit board.” These assumptions are not accurate. In Manweiler, the media drive module 18 does not connect to the midplane 76 as recited in claim 7 (i.e., between the claimed signal routing board and storage array circuit board. Likewise, the I/O module 36 does not connect to the midplane 76 as recited in claim 7 (i.e., between the claimed signal routing board and I/O controller circuit boards).

For at least these reasons, independent claim 7 and its dependent claims are allowable over Bicknel in view of Manweiler.

As yet another example, claim 7 recites at least three different circuit boards: a storage array circuit board, at least one I/O controller circuit board, and a signal routing circuit board. These boards are arranged in a particularly configuration as recited in the claim. Manweiler, however, does not show this configuration. In other words, the

midplane board 76 is not connected to a storage array circuit board and at least one I/O controller circuit board as recited in claim 7. Instead, the Examiner is performing an improper piecemeal construction that uses hindsight to arrive at the claim elements. In other words, the Examiner is picking and choosing unrelated embodiments or teachings from Manweiler and forcing them into the embodiment of Bicknel. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

For at least these reasons, independent claim 7 and its dependent claims are allowable over Bicknel in view of Manweiler.

#### **IV. Claim Rejections: 35 USC § 103**

Claim 10 is rejected under 35 USC § 103(a) as being unpatentable over Bicknel in view of USPN 2004/0062002 (Barringer). This rejection is traversed.

As noted above, Bicknel does not teach or suggest all the elements of independent claim 7. Barringer does not cure these deficiencies. Thus for at least the reasons given above with respect to independent claim 7, dependent claim 10 is allowable over Bicknel and Barringer.

### **CONCLUSION**

In view of the above, Applicants believe that all pending claims are in condition for allowance. Allowance of these claims is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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